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STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

Northwest Regional Office, 3190 - 160th Ave S.E. • Bellevue, Washington 98008-5452 • (425) 649-7000

August 28, 2000

Brian Vance
Long Painting Company
8025 10th Avenue South
Seattle, Washington 98108-4405

Dear Mr. Vance:

I have enclosed for your information a copy of the draft plan for the proposed surface soil sampling to be conducted at residential properties and city parks near the Long Painting Co. located at in Seattle's South Park community. The Washington Department of Ecology (Ecology) is conducting this sampling in response to complaints filed by community members about potential releases of contaminants from the Long Painting facility.

The draft plan, which provide details about the proposed surface soil sampling project, was prepared for Ecology by Public Health – Seattle & King County. It contains four elements:

- Quality assurance project plan;
- Field sampling plan;
- Safety plan; and
- Sample location map.

Copies of the draft plan have also been provided to the community. After Ecology and Public Health – Seattle & King County have had a chance to discuss the plan with the community, the sampling will be scheduled.

Please feel free to call me if you have any questions about the draft plan. I can be reached at (425) 649-7206.

Sincerely,

Barbara J. Trejo

Barbara J. Trejo
Toxics Cleanup Program

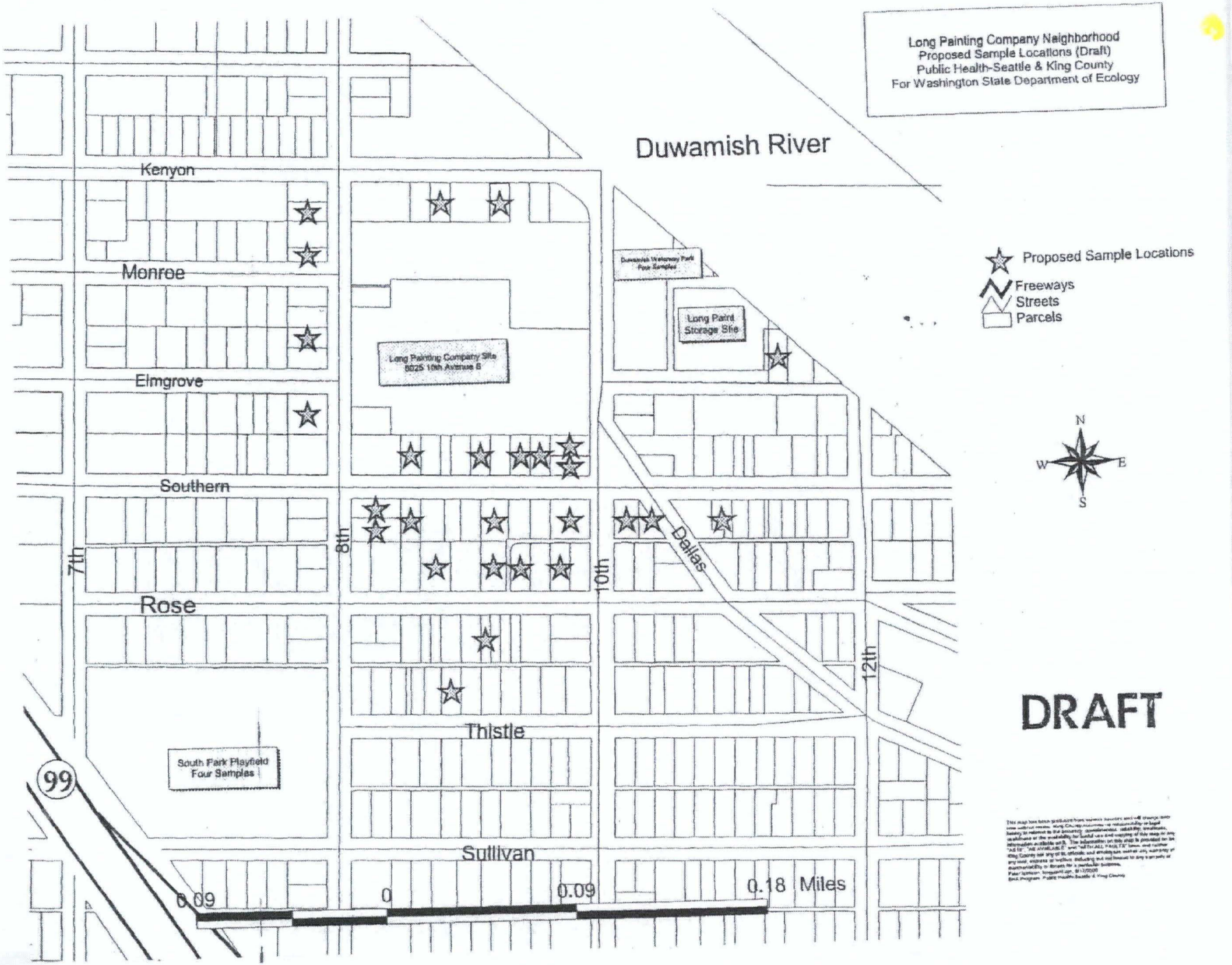
Enclosures

Surface Soil Sampling Plan (Draft)
Long Painting Company Neighborhood
South Park Community
Seattle, Washingon

Prepared by
Public Health-Seattle & King County
Environmental Health
Site Hazard Assessment Program

Prepared for
Washington State Department of Ecology
Northwest Regional Office
Toxics Cleanup Program

August 2000


Long Painting Company Neighborhood
Proposed Sample Locations (Draft)
Public Health-Seattle & King County
For Washington State Department of Ecology
Duwamish River
Kenyon
Monroe
Elmgrove
Southern
Rose
Thistle
Sullivan
7th
8th
10th
Dallas
12th
Duwamish Waterway Park
Four Samples
Long Paint
Storage Site
Long Painting Company Site
8025 10th Avenue S
South Park Playfield
Four Samples
99
Proposed Sample Locations
Freeways
Streets
Parcels
N
W
E
S
DRAFT
0.09
0
0.09
0.18 Miles

LP_00525

QUALITY ASSURANCE PROJECT PLAN (DRAFT)

Surface Soil Sampling
Long Painting Company Neighborhood

August 2000

The Quality Assurance Project Plan (QAPP) provides specific guidelines and procedures for sample collection; data analysis; and data reduction, review, and reporting. This QAPP is to be used in conjunction with two other plans developed for this project: a field sampling plan and a health and safety plan.

1.0 PROJECT DESCRIPTION

The Long Painting Company neighborhood is being evaluated as part of an Initial Investigation conducted pursuant to the State of Washington Model Toxics Control Act Cleanup Regulation (Chapter 173-340 WAC). Surface soil samples will be collected from the neighborhood by Public Health – Seattle & King County (PHSKC), Site Hazard Assessment Program, on behalf of the Washington State Department of Ecology (Ecology) and analyzed for metals. This sampling and analysis is being conducted in response to citizen concerns regarding possible metal contamination of soils at residential and park properties in the vicinity of the Long Painting Company.

1.1 Site Description

The Long Painting Company neighborhood is a mixed residential and industrial area in the South Park area of King County. South Park consists of both incorporated area at the south of the city of Seattle and unincorporated area of King County. The South Park neighborhood is bordered by the Duwamish River to the north and east, State Highway 509 to the west, and South 100th Street to the south.

1.2 Objectives

The primary objective of the study is to define the possible magnitude and extent of heavy metal contamination in surface soil in the neighborhood surrounding the Long Painting Company.

1.3 Selection of Sampling Locations

Twenty-seven residential properties and two park sites will be sampled in the Long Painting Company neighborhood. Many of the residential properties selected for sampling are properties where Ecology and the Puget Sound Clean Air Agency received complaints about releases of contaminants from the Long Painting Company. The park located between the Long Painting Company was selected for sampling because of community concerns. Additional sampling sites were chosen in the neighborhood to obtain good sampling coverage around the Long Painting site. An additional city park located three blocks southwest of Long Paint will also be sampled.

One sample will be collected at each residential property; four samples will be collected at each park. The least disturbed areas on each property will be sampled. Samples will be taken as far away from roads and driveways as possible, as well as away from the sides of structures to minimize other possible sources of localized metal contamination. These other possible sources include leaded gasoline, waste oil spills that may contain metals, and/or any historic use of heavy metal based paint on the structures.

1.4 Sampling and Analysis

Surface samples will be taken from below apparent vegetation levels and at depths of between 0-2" below grade in soils showing the least disturbance. Approximately 35 surface soil samples will be collected. Sampling protocols are presented in the field sampling plan. All of the soil samples will be analyzed for Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Thallium and Zinc by EPA Method 6010, Hexavalent Chromium by EPA Method 7196, and Mercury by EPA Method 7471.

Chemical analysis will be performed using SW 846 methods. OnSite Environmental, Redmond, Washington, will analyze the metals under EPA Methods 6010 and 7471. Sound Analytical Services, Fife, Washington, will analyze the Hexavalent Chromium under EPA Method 7196 as a subcontractor to OnSite Environmental.

1.5 Expected Schedule

Letters will be sent by PHSKC to property owners requesting permission to sample at the selected properties after Ecology and PHSKC meet with community members to discuss the draft, sampling plan. Sample collection is expected to begin soon after permission from the property owners has been received by PHSKC. Sample collection will occur over one or two days.

2.0 PROJECT ORGANIZATION

PHSKC Site Hazard Assessment Program is conducting this project on behalf of Ecology. OnSite Environmental Inc. will provide sample analysis services (with the exception of the Hexavalent Chromium analysis, which they will subcontract to Sound Analytical Services), data validation and quality assurance/quality control (QA/QC) services to PHSKC for the project. Key personnel for this sampling and analysis project are listed as follows:

- Ecology Project Manager: Barbara Trejo
- PHSKC Project Manager: Peter Isaksen
- PHSKC Sampling Support: Carsten Thomsen, Yolanda King
- OnSite Environmental Project Manager: David Baurmeister

3.0 DATA QUALITY OBJECTIVES

Chemical results for environmental samples are only estimates of the true values of the parameters measured. These estimates are affected by variability in the medium sampled and by random and systematic errors introduced by the sampling and measurement processes.

Data quality objectives (DQOs) are qualitative or quantitative statements of the precision, accuracy (or bias), representativeness, completeness, and comparability necessary for the data to serve the objectives of the project. The DQO's for these parameters selected for this project are defined in the following subsections. These objectives define data quality that will be adequate to serve the performance monitoring purposes for which the data will be used under MTCA.

3.1 Precision

Precision is a measure of the reproducibility of an analytical result (i.e., the ability to obtain the same or similar results on replicate measurements of the same or of duplicate samples). Matrix variations, sample preparation procedures, and the analytical method affect reproducibility. Precision is measured by the variability in results between replicate analyses (e.g., the relative percent difference between duplicates).

Field precision will be assessed through the analysis of duplicate field samples collected from a particular sampling point. A minimum of one duplicate per twenty samples will be collected. The DQO for the field duplicates will be relative percent difference (RPD) no greater the $\pm$ 50% for each target element in the samples.

Laboratory precision will be evaluated by analysis of laboratory duplicates. Analysis and comparison of laboratory duplicates will evaluate laboratory precision within an analytical data group (batch). Laboratory duplicates will be analyzed for one sample in twenty (i.e., 5%) or one per batch of samples analyzed, whichever is more frequent. Target laboratory precision objectives for laboratory duplicates, expressed as RPD, are 20% for each sample and element.

These objectives are consistent with levels of precision normally achievable by the standard EPA methods selected for this project. Duplicates with RPD values in excess of these control limits may indicate a lack of precision resulting from sampling or analysis techniques, and the results should be evaluated accordingly. In these cases, the usability of the data for decision-making will include consideration of the difference between the concentrations in the samples and the corresponding decision criteria.

3.2 Accuracy

Accuracy is defined as how closed a measured parameter is to its true value. The accuracy of a measurement is affected by a combination of random error (precision, as discussed above) and systematic error (bias). Potential sources of bias include imperfect sample collection methods (such as equipment cleaning), chemical instability of the samples, and interferences (matrix effects).

The potential for introducing bias will be minimized by adherence to established procedures for collections, preservation, transportation, and storage of samples (Section 4).

Spiking a sample with target elements of known concentration and calculating the percent recovery will assess bias due to sample matrix effects. In addition, analytical bias will be assessed by analyzing a standard reference material (SRM) and calculating the percent difference between the measured value and the know value of the standard. SRMs are purchased samples with certified, known concentrations.

Matrix spike samples and SRMs will be analyzed for no less than one sample in twenty (i.e., 5%) of samples or one per batch analyzed, whichever is more frequent. Target laboratory accuracy objectives for matrix spike recoveries, expressed as percent recovery of the known spike amount, are 75% to 125% for each sample and element. Target laboratory accuracy objectives for SRM results, expressed as percent difference between the measured and known amounts, are $\pm$ 35% for each sample and element.

Laboratory accuracy (as bias) will also be assessed by analysis of procedure (method) blank samples. A method blank sample is an aliquot of known clean soil, sand, or deionized water sample that is prepared, digested, and analyzed along with an analytical batch of samples. The method blanks are analyzed to indicate potential sample contamination from contaminated laboratory equipment or procedures. Positive contamination from laboratory equipment would indicate a potential high bias to associated data. At least one method blank sample will be prepared and analyzed along with each analytical data group (batch).

3.3 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, element variations at a sampling point, or an environmental condition. Representativeness is a qualitative parameter that is most concerned with the proper design of the sampling program. The representativeness criterion is best satisfied by making certain that sampling locations are selected properly and sufficient number of samples are collected. The samples for this project will be collected in accordance with the sampling strategy specified for the site.

3.4 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. Sample data should be comparable with other measurement data for similar samples and sample conditions. Therefore, sampling methods are similar to those in previous studies of the area. Comparability will be maintained by use of EPA-approved analytical methods, consistent reporting limits, and consistent units. Comparability is affected by the other DQO parameters because only when precision and accuracy are known can data sets be compared with confidence.

3.5 Completeness

Completeness is a measure of the amount of valid data obtained from a sampling and analysis program, expressed as a percentage of the number of valid measurements that should have been obtained. In general, completeness can be impacted by the number of field samples collected as opposed to the number planned, as well as by the number of valid analytical measurements obtained as completed to the number requested. For this project, it is planned to collect 1 soil sample from each residential site and 4 samples from each park site, all samples from 0- 2" depth.

4.0 SAMPLING PROCEDURES

The procedures that will be followed for collection, transportation, and storage of the soil samples are described in the field sampling plan (PHSKC 2000). This includes procedures for sample custody and chain of custody documentation, and for recording field and sample handling data.

The field QC sampling will include field duplicates of the soil samples at a rate of approximately one per twenty environmental samples collected. Digging equipment will be cleaned with non-phosphate detergent and rinsed with de-ionized water after every sampling. Pre-cleaned collection spoons will be used for each sample collected. No cleaning of collection spoons will be done in the field.

5.0 ANALYTICAL PROCEDURES

5.1 Analytical Scheme

As discussed in Section 1.4, the design of the sampling and analysis program will include a total of 35 sampling locations. There will be approximately 5 % duplicate samples. Soil samples will be taken at 0-2" below grade.

The following subsection describes analytical methods that can achieve the data quality objectives and that will be considered for this project. The actual methods will be selected in discussions between PHSCK and OnSite.

5.2 Analytical Methods

The required analytical methods and detection limits are listed in below. The soil samples will be prepared using either a hot plate digestion technique (EPA SW 846 Method 3050B) or a microwave digestion technique (EPA SW 846 Method 3051A). Antimony, Arsenic, Beryllium, Cadmium, Chromium, Hexavalent Chromium, Copper, Lead, Nickel, Selenium, Silver, Thallium, and Zinc in the soil samples will be analyzed by inductively coupled plasma (ICP) atomic emission spectroscopy, ICP-Trace, (a method similar to ICP that can achieve lower detection limits), ICP mass spectrometry (ICP-MS), or graphite furnace atomic absorption spectroscopy (GRAA), as described in the 6000 and 7000 series methods of EPA SW-846.

The quality control (QC) element and acceptance limits that will supersede the standard method requirements are the analysis of a standard reference material (SRM). The single-blind-quick-response format will be used as described. The SRM will be prepared by Environmental Resource Associates and shipped to OnSite. The acceptable performance limits will only be shipped to PHSKC. An SRM will be analyzed with each analytical batch of samples. Each batch result will be phoned to PHSKC where the acceptable performance limits will be compared by staff. The SRM will provide a measure of accuracy, as well as batch to batch precision and comparability.

The particle size distribution of the material will be determined after drying. The adapted geotechnical sieve analysis will eliminate all particles greater than 2mm least mean diameter.

5.3 Calibration Procedures

Each laboratory instrument used must be calibrated, prior to the analysis of samples, to establish the instrumental response to known standard concentrations. Stock standard solutions, from which working solutions are generated, must be traceable to national reference standards, and this traceable must be documented. Initial calibration curves must be analyzed at the initiation of each analytical sequence, every 23 hours, or as necessitated by corrective action processes. All subsequent sample measurements must be within the calibrated range of instrument. The laboratory calibration procedures are specified in the appropriate analytical methods and the laboratory analytical standard operating procedures.

Continuing calibration verification (CCV) standards must be analyzed every ten samples. Acceptable CCVs must bracket samples. If a CCV result is not within the acceptance limits, the appropriate corrective action must be taken. If, following corrective action, continuing calibration criteria are still not met, a full multi-point initial calibration must be performed, and the associated samples reanalyzed with a new in-control continuing calibration. It is not acceptable to simply flag samples associated with an out-of-control calibration check standard without reanalysis.

6.0 DATA REDUCTION, REVIEW, AND REPORTING

The following sections describe the process of handling field and laboratory data in terms of data reduction, review, and reporting.

6.1 Laboratory Data Review and Reporting

Data generated by the laboratory will be reviewed prior to its release. In-laboratory data reduction and review will conducted by the laboratory in accordance with the review processes documented in its Quality Assurance Manual. At a minimum, the laboratory will perform the following levels of data review:

- Analytical level (bench level chemist).
- Data section level (laboratory section supervisor).
- Final quality review (laboratory project manager of laboratory QA officer).

All data packages must be complete, legible and of sufficient quality to undergo evaluation by an independent, third party validator. Incomplete, illegible or unusable data packages will not be accepted, and will be returned to the laboratory for correction. Minor clarification and corrections to the data package, which are requested by the data validator, will be provided by the laboratory within three (3) calendar days of the request.

Completed data packages from the laboratory will included a narrative outlining any problem, corrections, anomalies, description and discussion of data qualifiers and conclusions, as well as chain-of-custody documentation. In addition, the laboratory will also provide a copy of the data deliverables in electronic format. All data package pages will be sequentially numbered.

6.2 Data Reduction and Review

Data reported by the laboratory and data collected in the field will be reduced by manual and computerized calculations. Procedures for ensuring the correctness of the data reduction process will include:

- Data will be reduced either manually on calculation sheets and field logbooks or by computer in spreadsheets or databases.
- Technical personnel will document and review their own work and are responsible for the correctness of the work.
- Calculations will be checked for methodology and accuracy, prior to use in reports, by an engineer or scientist of professional level equal to or higher than that of the person who performed the calculations.
- The project QA officer will be responsible for ensuring that data reduction is performed in accordance with this QAPP.

6.3 Data Management

This section describes the procedures to be used to document and track chemical data. The objective of these procedures is to assure that all data collected during the project are processed and archived in a manner that assures data equality, security, and retrievability, thereby assuring information integrity. A microcomputer-based data management system will be used to store and track project data from collection through reporting.

Maintaining data integrity involves all aspects of the project beginning with the collection of the first sample and continuing through data reporting of validated results. Three primary tasks will be carried out to ensure data integrity throughout the duration of the project: sample management, management of hardcopy forms of data, and electronic data management. Data submissions will be in the format specified by the Department of Ecology for reporting to the department.

6.3.1 Sample Management

Sample management will involve monitoring and tracking of field samples through the chain-of-custody process and serving as a liaison between the sample collectors, the sample processors, and the analytical laboratory. The data manager will assure the following sample management tasks are conducted:

- Accurately tracking the transport of field sample materials to the analytical laboratory and the disposition of resulting analytical data.
- Keeping the laboratory informed of pending sample shipments to achieve the required turnaround times and avoid missing sample holding times.
- Confirming that all requested procedures and analysis have been performed and coordinating with the laboratory for any additional analyses.

6.3.2 Management of Hardcopy Data

Field data will be recorded on standard forms. Copies or originals of the field data will be sent to Ecology for appropriate long-term storage. Some of the laboratory data deliverables will be reported only in hardcopy format (i.e., an electronic format is not feasible for some deliverables).

6.3.3 Electronic Data Management System

A file data management system will be used for this project to store the results of the laboratory chemical analyses and associated field information. These data will be stored in a folder specifically designated for this project. The information compiled for the chemical analysis results will include:

- Station identification and sample identification.
- QA/QC sample identification and duplicate sample cross reference identification.
- Analytical laboratory/analytical method.
- Dates of analysis and extraction.
- Constituents, results, units, QA qualifiers, and detection limits.
- Laboratory QC data: method blank, blank spike, blank spike duplicate, laboratory matrix spike, laboratory replicate and SRM results.

The associated field information will include:

- Sample location identification, including any survey coordinates (GPS locations will be recorded).
- Setbacks to structures, roads, driveways, etc.
- Date of sample collection.

6.3.4 Database Entry

Information from each sampling event will be filed following the receipt of the data from the field or laboratory. Data entered manually into databases from documents and field forms will be checked to assured that correct data transcription has occurred. Electronically loaded data will be compared to hardcopy forms of the data to confirm correct transfer.

6.3.5 Retrieval and Transfer of Database Information

The creation and maintenance of a file will facilitate data dissemination and data interpretation tasks. Possible formats included data reports or inputs to graphical products for sorting, presenting, or evaluating the results. Only the data manager or personnel authorized by the data manager will permitted to update or edit the file. Other personnel who need to use the data will be prohibited from altering the data and structure of the file.

7.0 QUALITY CONTROL PROCEDURES

7.1 Field QC Procedures

Sample containers, preservation methods, and holding times will be in accordance with the quality control requirements specified in the analytical methods and the information presented in Section 4.

Field duplicate samples (i.e., two samples from a given sample location) will be collected in order to distinguish between the variability in results introduced by the field and sample handling prior to receipt by laboratory and the variability introduced by the laboratory procedures. The field replicates will be handled and analyzed in the same manner as the other environmental samples. The types and frequencies of field replicates are discussed in Section 4.

8.0 PERFORMANCE AND SYSTEM AUDITS

The OnSite project QA officer will monitor the performance of the field and laboratory quality assurance program. This will be achieved through regular contact with PHSKC project manager and the OnSite senior project chemist. Data assessment will be based on the data quality objectives discussed in Section 3.

9.0 DATA ASSESSMENT PROCEDURES

9.1 Technical Validity

Technical validation involves comparison of QC and instrument performance standard results to required control limits. Two levels of validation will be performed: a full validation and a summary validation. The following QC elements will be reviewed for data packages undergoing summary validation:

- Analytical holding times
- Chain of custody and sample handling
- Initial and continuing calibration
- Internal standards, ICP/MS only
- Instrument tuning standards, ICP/MS only
- Analytical accuracy {(matrix spike compounds and standard reference materials (SRMs)}, expressed as percent recovery (%R)
- Analytical precision (comparison of duplicate sample results) expressed as relative percent difference (RPD)
- Reported detection limits

9.3 Data Usability

9.3.1 Precision

The results from field duplicate analyses and laboratory duplicate analyses will be used to determine the relative percent difference (RPD) between the pair of analyses. The RPD for field duplicates will be used as a measure of field precision and RPD for laboratory duplicates will be used as a measure of analytical precision. The RPDs will be calculated as follows:

$$RPD\ (\%) = 100\ \frac{(C_1 - C_2)}{\{(C_1 + C_2)/2\}}$$

Where:

RPD = relative percent difference
C_1 = the higher concentration measured for the duplicate samples
C_2 = the lower concentration measured for the duplicate samples

9.3.2 Accuracy

For Spiked samples (matrix spikes and lab control samples), the percent recovery (%R) will be used as the measure of accuracy and is calculated as follows:

$$\%\ R = [100\ (C_s - C_n)]\ /C_{sa}$$

Where:

%R	=	percent recovery
C_s	=	measured concentration in spiked aliquot
C_n	=	measured concentration in non-spiked aliquot
C_{sa}	=	actual concentration due to spike added

The percent difference (% D) for analysis of SRM samples will be used as an additional measure of accuracy and is calculated as follows:

$$\%\ D = \{100\ (C_{srm} - C_m)\}\ /\ C_{SRM}$$

Where:

% D	=	percent difference
C_m	=	measured concentration in SRM aliquot
C_{srm}	=	certified SRM concentration

9.3.3 Completeness

For the reason explained in Section 3.5, it is not feasible to pre-determine the number of planned samples to be submitted for analysis for this project. Therefore, for the data validation report,

the measure of completeness will be based on the number of environmental soil samples actually submitted to the laboratory for analysis, and will be calculated as follows:

$$C\ (\%) = \frac{100\ (\text{Number of acceptable measurements})}{(\text{Number of samples submitted})}$$

Completeness will be further assessed by the PHSKC project manager against the project DQOs and sampling objectives, and reported to Ecology, as described in Section 3.5.

10.0 REFERENCES

Ecology, 1991. *Guidelines and Specifications for Preparing Quality Assurance Project Plans.* Washington State Department of Ecology, Quality Assurance Section, Environmental Investigations and Laboratory Services Program. Manchester, WA. May 1991.

Quality Assurance Project Plan, Vashon/Maury/Mainland Site Soil Sampling, Public Health - Seattle & King County, Environmental Health Division, For Washington Department of Ecology, July 1999.

U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response November 1986. *Test methods for Evaluating Solid Waste, Physical/Chemical methods, SW-846, 3rd Edition.* Washington, D.C. (With updates, January 1998).

U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. September 1993a. *Data Quality Objectives Process for Superfund.* EPA 540-R-93-071. Washington, DC.

U.S. Environmental Protection Agency, Quality Assurance Division. July 1993b. EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations. Washington, DC.

U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. February 1994a. *USEPA Contract Laboratory Program, National Functional Guidelines for inorganic Data Review.* EPA 540/R-94/013. Washington DC.

U.S. Environmental Protection Agency, Office of Research and Development. September 1994b.*Guidance for the Data Quality Objectives Process, EPA QA/G4.* Washington, DC.

U.S. Environmental Protection Agency, Office of Research and Development. February 1998. *EPA Guidance for Quality Assurance Project Plans EPA QA/G-5. EPA/600/R-98/018.* Washington, DC.

FIELD SAMPLING PLAN (DRAFT)

Surface Soil Sampling
Long Painting Company Neighborhood

August 2000

The field sampling plan will be used to guide surface soil sample collection at the Long Painting Company Neighborhood.

1.0 Project Description

The Long Painting Company neighborhood is being evaluated as part of an Initial Investigation conducted pursuant to the State of Washington Model Toxics Control Act Cleanup Regulation (Chapter 173-340 WAC). Surface soil samples will be collected from the neighborhood by Public Health – Seattle & King County (PHSKC), Site Hazard Assessment Program, on behalf of the Washington State Department of Ecology (Ecology) and analyzed for metals. This sampling and analysis is being conducted in response to citizen concerns regarding possible metal contamination of soils at residential and park properties in the vicinity of the Long Painting Company.

The Long Painting Company neighborhood is a mixed residential and industrial area in the South Park area of King County. South Park consists of both incorporated area at the south of the city of Seattle and unincorporated area of King County. The South Park neighborhood is bordered by the Duwamish River to the north and east, State Highway 509 to the west, and South 100th Street to the south.

Twenty-seven residential properties and two park sites will be sampled in the Long Painting Company neighborhood. Many of the residential properties selected for sampling are properties where Ecology and the Puget Sound Clean Air Agency received complaints about releases of contaminants from the Long Painting Company. The park located between the two Long Painting Company properties was selected for sampling because of community concerns. Additional sampling sites were chosen in the neighborhood to obtain good sampling coverage around the Long Painting site. An additional city park located three blocks southwest of Long Paint will also be sampled.

One sample will be collected at each residential property; four samples will be collected at each park. The least disturbed areas on each property will be sampled. Samples will be taken as far away from roads and driveways as possible, as well as away from the sides of structures to minimize other possible sources of localized metal contamination. These other possible sources include leaded gasoline, waste oil spills that may contain metals, and/or any historic use of heavy metal based paint on the structures.

Surface samples will be taken from below apparent vegetation levels and at depths of between 0-2" below grade in soils showing the least disturbance. Approximately 35 surface soil samples will be collected. Sampling protocols are presented in the field sampling plan. All of the soil samples will be analyzed for Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Thallium and Zinc by EPA Method 6010, Hexavalent Chromium by EPA Method 7196, and Mercury by EPA Method 7471.

2.0 Sampling Objectives

The objective of the surface soil sampling is to define the possible magnitude and extent of metal contamination in surface soil in the neighborhood surrounding the Long Painting Company.

3.0 Key Field Personnel

- Peter Isaksen - Sampling, Recording, Decontamination
- Yolanda King - Sampling, Recording, Decontamination
- Carsten Thomsen - Sampling, Recording, Decontamination

4.0 Request for Analysis

Form Submitted
OnSite Environmental, Inc., Redmond notified about proposed sampling

5.0 Sampling

Proposed Dates- To be decided after meeting with community

Media-Soil

Sample sites -Four surface soil samples will be collected on the park properties; one sample will be taken on each residential property.

Frequency - One time sampling event.

Sampling Methods- Surface soil samples will be collected from approximately 0 to 2 inches below ground surface with pre-cleaned stainless steel spoons. Shovels or other appropriate equipment will be used to remove any surface organic layer such as grass.

Chemical Analysis – Metals – see QAPP for specific analytical methods

Containers - 3-4 oz. glass jars.

Sample Preservation- Sample jars will be stored on ice in coolers until delivered to the laboratory. Samples will be delivered the same day.

Equipment Decontamination - Digging equipment will be scraped, cleaned with non-phosphate detergent, and rinsed with de-ionized water at each sampling site. Separate pre-cleaned stainless steel spoons will be used to collect each sample. No cleaning will be done in the field for sample collection devices.

6.0 Investigative Waste Disposition

Any excess soil collected during the sampling from each property will be returned to the sampling location.

7.0 Site-Specific Considerations

Sample locations may change based on observations during site visit.

8.0 Field Sample Data and Chain-of-Custody Sheet

The field sample data and chain-of-custody sheet will accompany samples submitted to the laboratory.

9.0 Laboratory QA/QC

All chemical analysis including laboratory QA/QC will be done by OnSite Environmental Inc., Redmond, a certified lab for the chemical parameters used for this project.

10.0 Field QA/QC

Duplicates – One per twenty samples collected (see QAPP)

Transfer Blank- Sampling container will be filled with a suitable blank substance and sealed and kept with other samples throughout the entire sampling event if recommended by the laboratory.

HEALTH AND SAFETY PLAN (DRAFT)

Surface Soil Sampling
Long Painting Company Neighborhood

August 2000

The health and safety plan will be used to identify, evaluate, and control health and safety hazards while conducting the surface soil sampling at the Long Painting Company neighborhood.

1. 0 General

Site Name/Address- Long Painting Company Neighborhood
South Park Community
Seattle, Washington 98108
PHSKC Project Manager-Peter Isaksen
PHSKC Plan Preparer-Peter Isaksen
Review/Approval-Greg Bishop
Proposed Date of Field Activities- (To Be Decided)

2.0 Project Description

The Long Painting Company neighborhood is being evaluated as part of an Initial Investigation conducted pursuant to the State of Washington Model Toxics Control Act Cleanup Regulation (Chapter 173-340 WAC). Surface soil samples will be collected from the neighborhood by Public Health – Seattle & King County (PHSKC), Site Hazard Assessment Program, on behalf of the Washington State Department of Ecology (Ecology) and analyzed for metals. This sampling and analysis is being conducted in response to citizen concerns regarding possible metal contamination of soils at residential and park properties in the vicinity of the Long Painting Company.

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Twenty-seven residential properties and two park sites will be sampled in the Long Painting Company neighborhood. Many of the residential properties selected for sampling are properties where Ecology and the Puget Sound Clean Air Agency received complaints about releases of contaminants from the Long Painting Company. The park located between the Long Painting Company was selected for sampling because of community concerns. Additional sampling sites were chosen in the neighborhood to obtain good sampling coverage around the Long Painting site. An additional city park located three blocks southwest of Long Paint will also be sampled.

One sample will be collected at each residential property; four samples will be collected at each park. The least disturbed areas on each property will be sampled. Samples will be taken as far away from roads and driveways as possible, as well as away from the sides of structures to minimize other possible sources of localized metal contamination. These other possible sources include leaded gasoline, waste oil spills that may contain metals, and/or any historic use of heavy metal based paint on the structures.

Surface samples will be taken from below apparent vegetation levels and at depths of between 0-2" below grade in soils showing the least disturbance. Approximately 35 surface soil samples will be collected. Sampling protocols are presented in the field sampling plan. All of the soil samples will be analyzed for Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Thallium and Zinc by EPA Method 6010, Hexavalent Chromium by EPA Method 7196, and Mercury by EPA Method 7471.

3.0 Sampling Objectives

The objective of the surface soil sampling is to define the possible magnitude and extent of metal contamination in surface soil in the neighborhood surrounding the Long Painting Company.

4.0 Key Field Personnel/Duties

- Peter Isaksen - Sampling, Recording, Decontamination
- Yolanda King - Sampling, Recording, Decontamination
- Carsten Thomsen - Sampling, Recording, Decontamination

5.0 Site/Waste Characteristics

Possible heavy metal contaminated soils affected by the past and current business practices by the Long Painting Company may be present in soils surrounding neighborhood.

6.0 Hazard Summary

Chemical
    Specific- Metals
    Overall- Volatile Organic Compounds (Not expected)
Physical
    Specific-Fall/Trip
    Overall-
Confined Space-None
Emergency Exit Situations-Not Needed

7.0 Site Safety Workplan

Site Control:
- Perimeter Identified-Property Lines
- Work Areas Designated - 25 feet around sampling sites
- Zones of Contaminates Identified-

Site Entry Procedures-None
Special Considerations-None
Special Site Equipment/Facilities-None
Work Limitations-None

8.0 Personnel Protection

Specific Tasks vs Level A/B/C/D

Site Entry-Level D
Sampling-Level D
Decontamination Sampling Equipment-Level D

Modifications

Action Levels-

Oxygen-Outdoors, should not be a Problem

Combustible gases- Combustible gases are not anticipated to be encountered. However, if detectable odor of solvents are present, reevaluate and determine need to return with combustible gas monitoring equipment.

Air Monitoring

Contaminants of Concern-None
Monitoring Equipment-

Equipment Decontamination

Solutions- Non-phosphate detergent and tap water for equipment washing; de-ionized water for final equipment rinse

Procedures

Equipment Cleaning Procedures- Brush off visible mud/dirt, wash with non-phosphate detergent, rinse with de-ionized water.

Protective Wear- Gloves, Boots, Goggles

Investigative Waste Disposal

Excess sample will be returned to the sample site.

9.0 Emergency Information

Ambulance-911
Fire Emergency-911
Hospital Emergency-
Poison Control Center-526-2121

10.0 Hospital Emergency Routes

Harborview Medical Center, 325 Ninth Avenue, Seattle, Washington - Go east to 14th Avenue S. turning left to go north over bridge. Turn left onto E. Marginal Way and then right onto Corson Avenue S. Take a right onto S. Michigan Street and a left onto entrance to I-5 Northbound. Take James Street exit, turning right on James St., turn right on Ninth Avenue.